Missouri River

Ministry of Land, Infrastructure and Transport
Government of Japan

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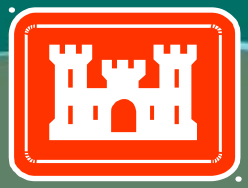
February 2008



Missouri River Basin

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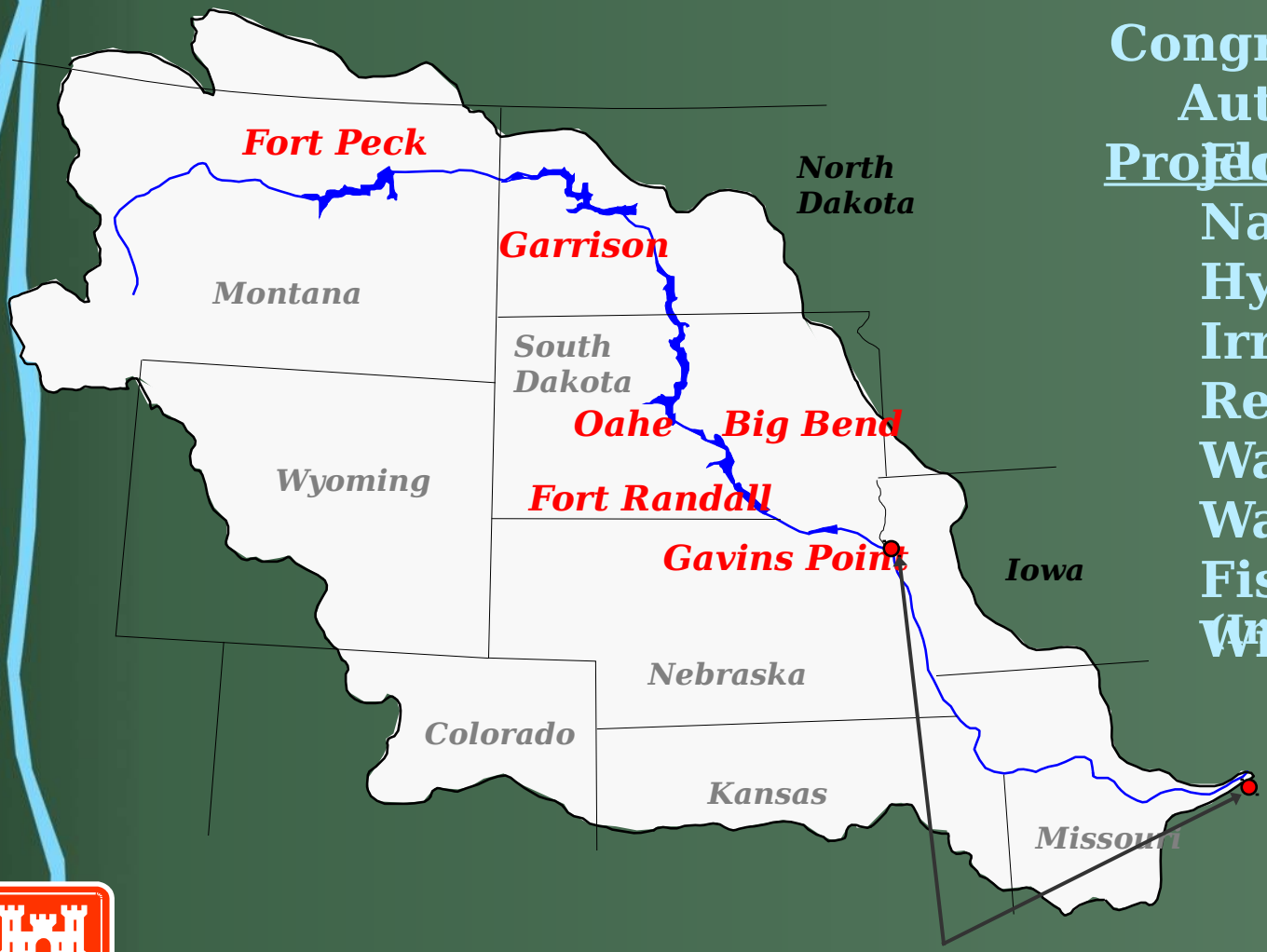
ssouri River Mainstem Reservoir System



Congressionally Authorized Project Purposes:

- Flood Control
- Navigation
- Hydropower
- Irrigation
- Recreation
- Water Supply
- Water Quality
- Fish and Wildlife (Including Endangered Species)

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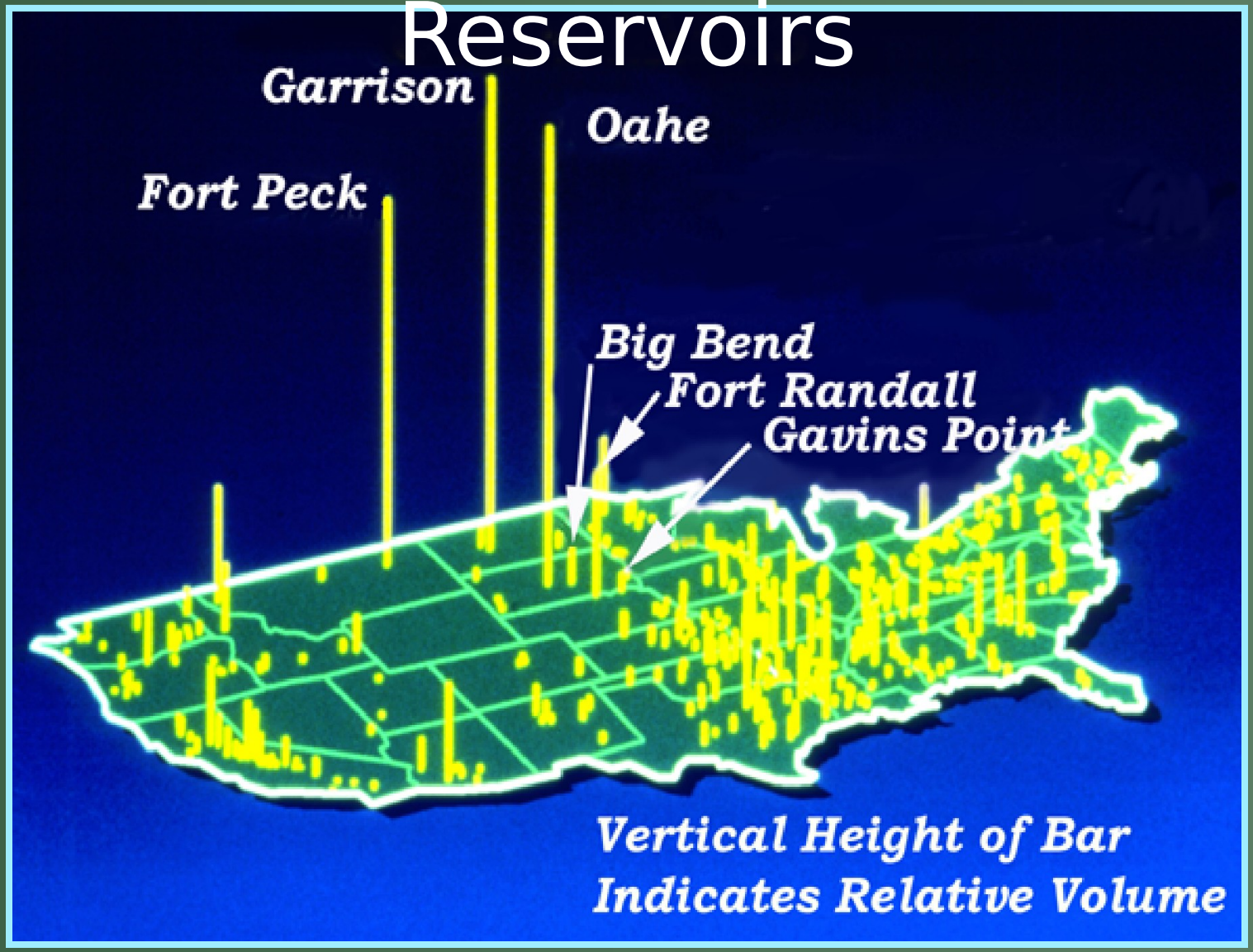
Bank Stabilization and Navigation Project
Sioux City, IA – St. Louis, MO

Storage Capacity of Corps Reservoirs



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Multiple Purposes, Multiple Interests

ECONOMIC

ENVIRONMENTAL

TRIBAL

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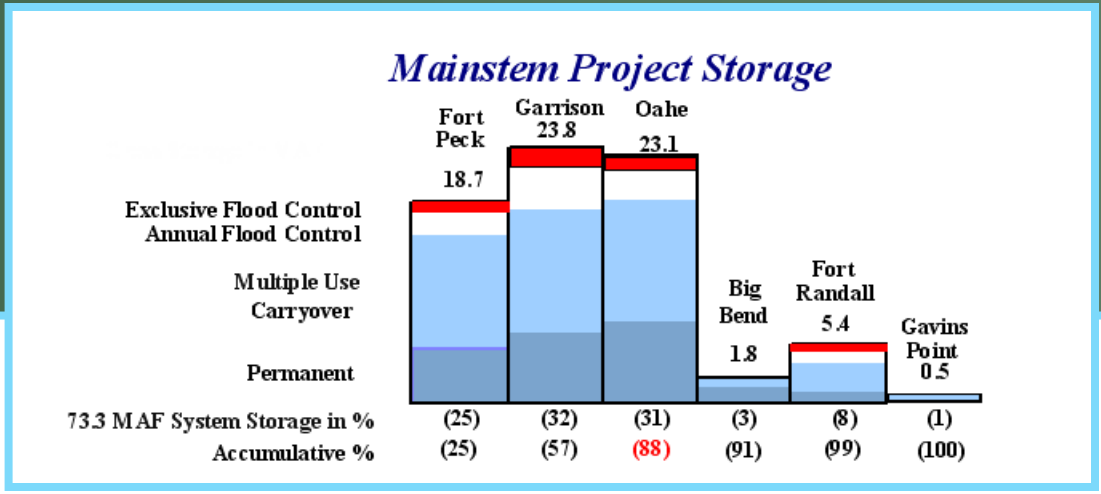
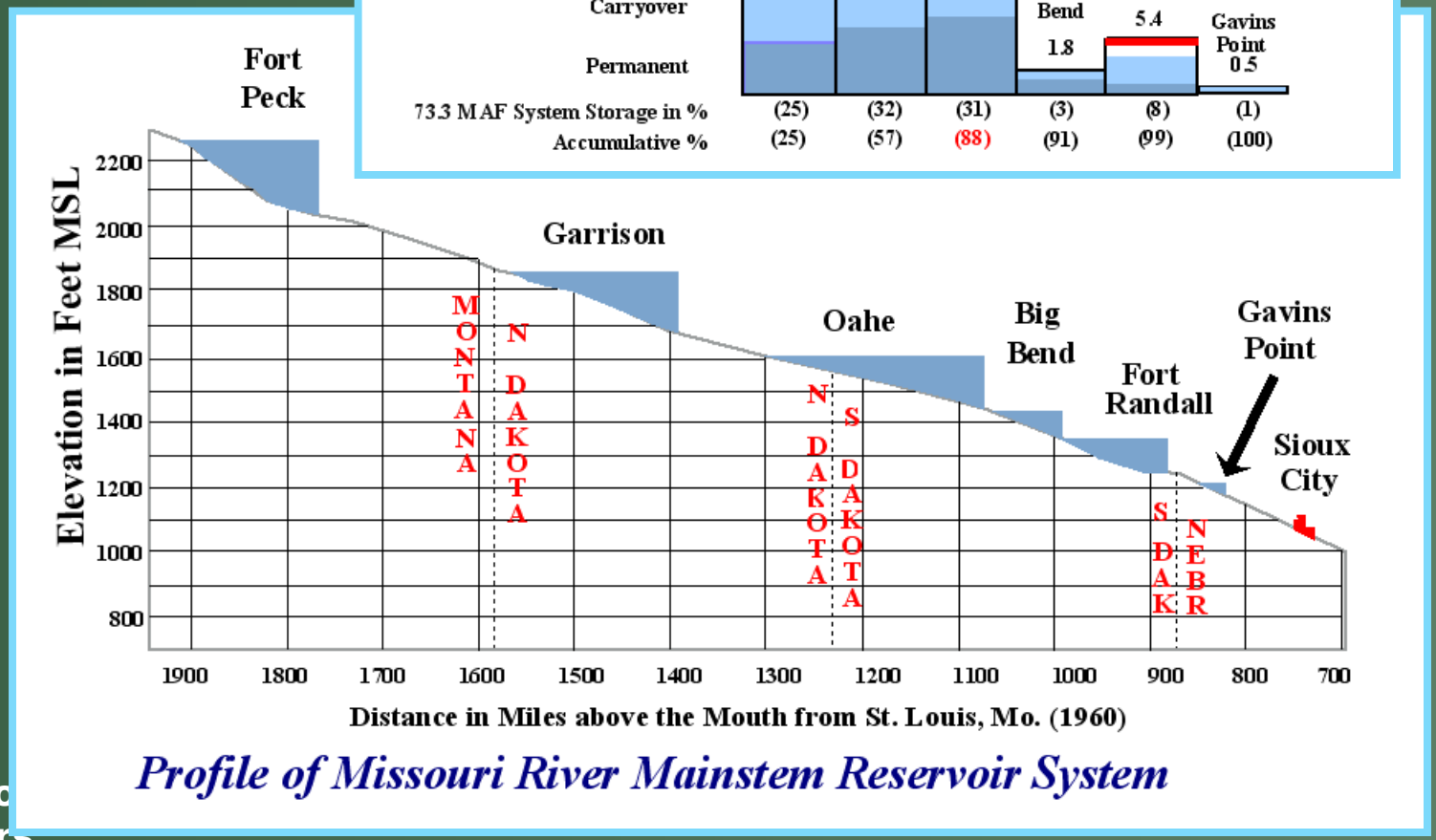
Garrison Dam

Mainstem System Storage





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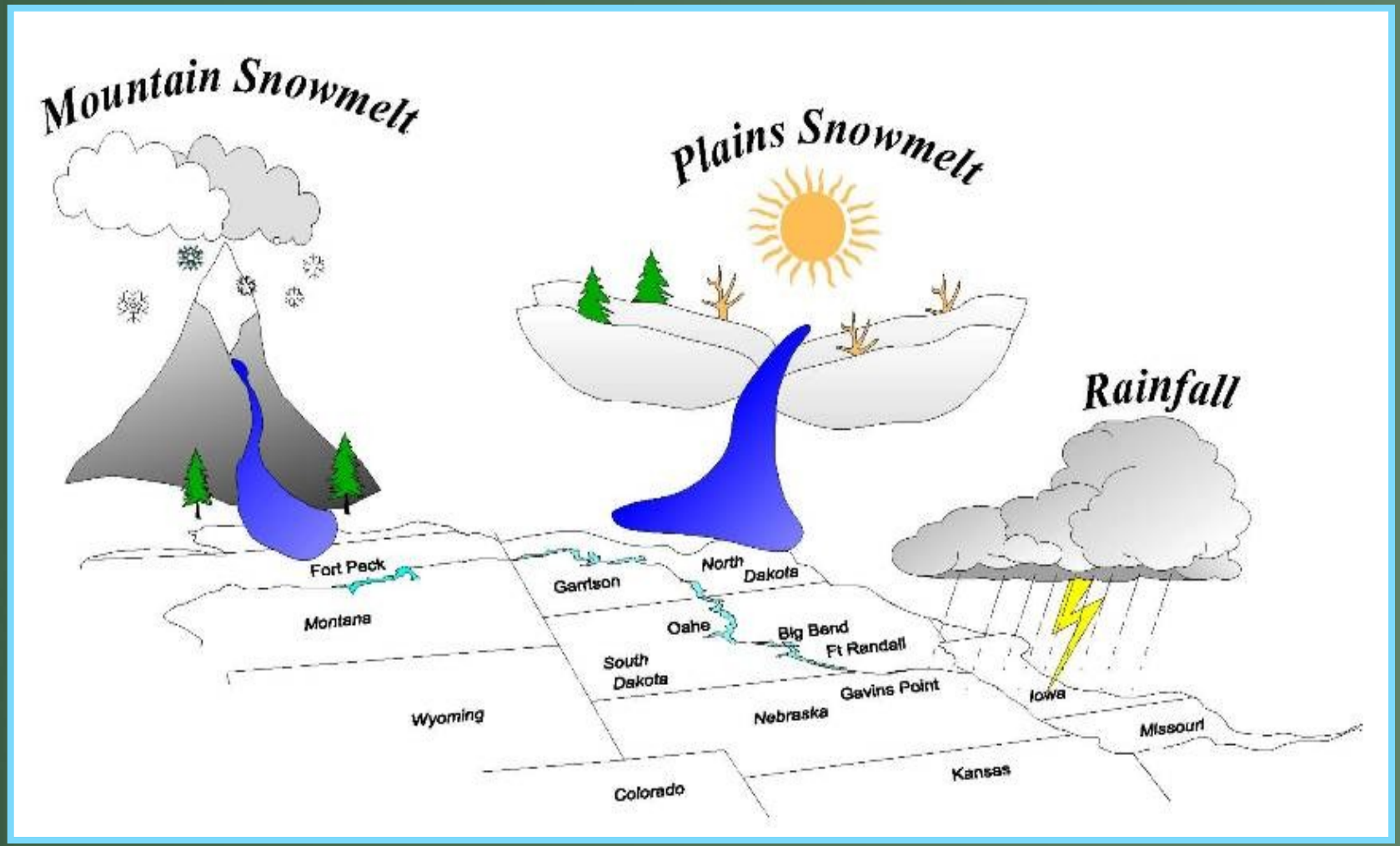
Types of Missouri River Basin Runoff



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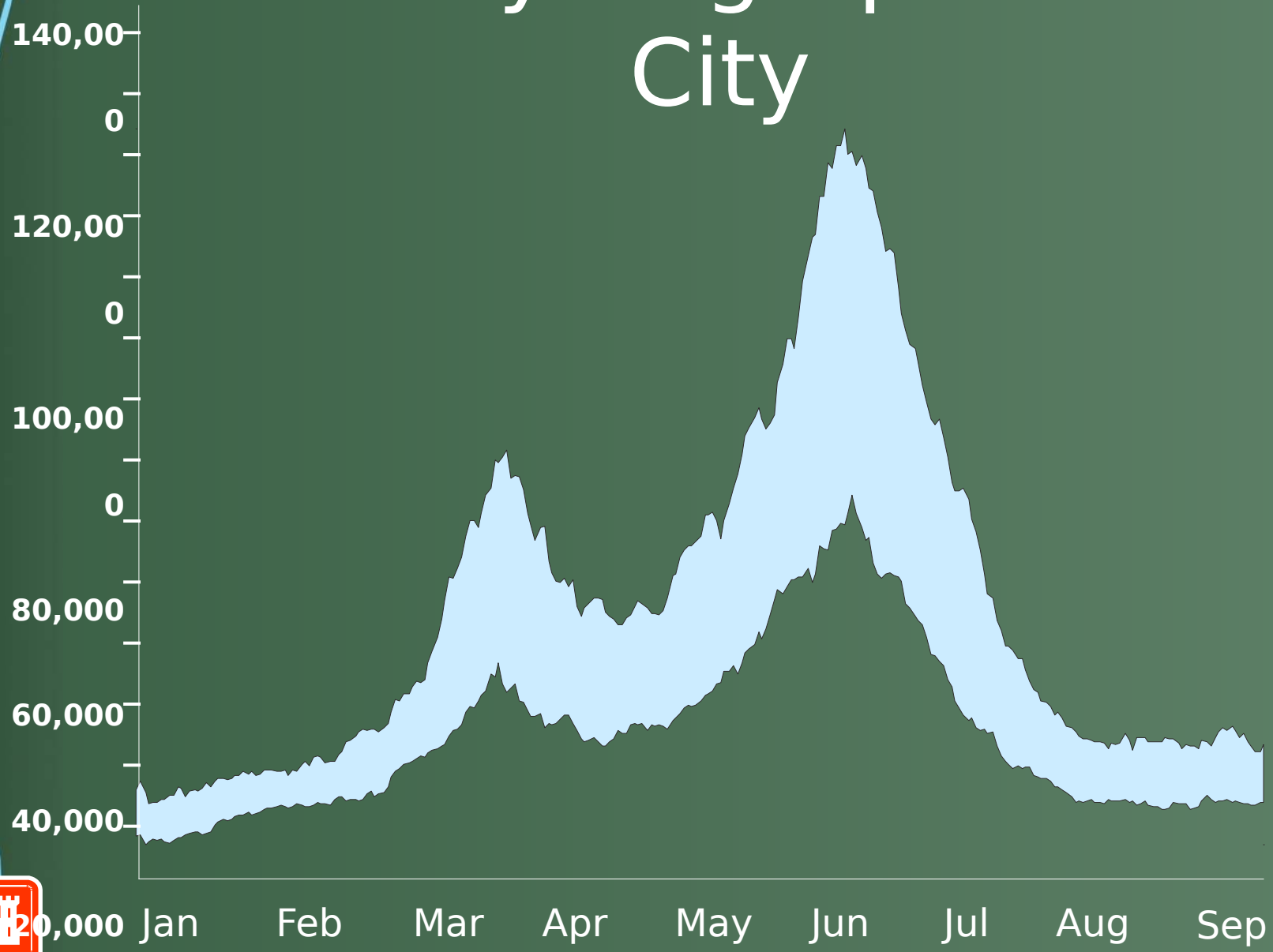
Natural Hydrograph at Sioux City



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Missouri River Bank Stabilization and Navigation Project

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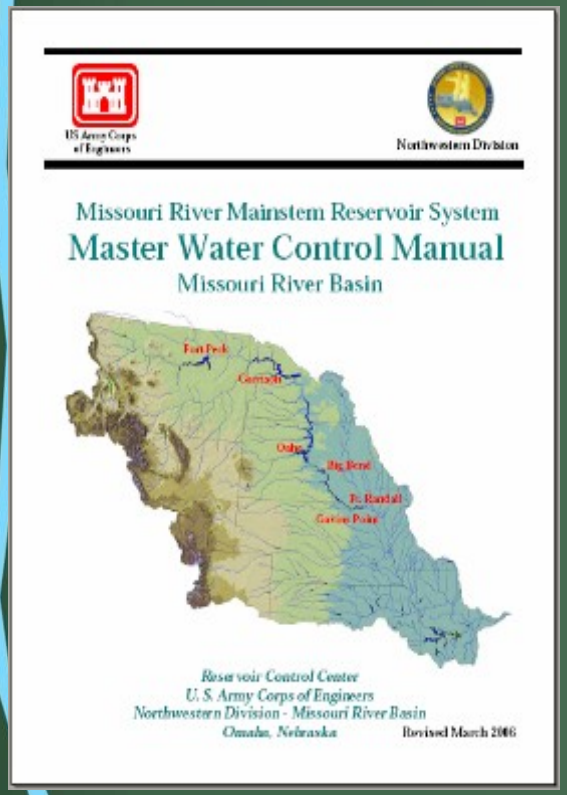
Missouri River Mainstem Reservoir System Master Manual



- First published in 1960
- Updated in 1975 and 1979
- Master Manual Review and Update began in November 1989 in response to late 1980's / early 1990's drought
- Manual was revised for drought conservation in March 2004
- Again revised in March 2006 for spring pulse

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Threatened and Endangered Species

Interior Least

Piping

Pallid Sturgeon

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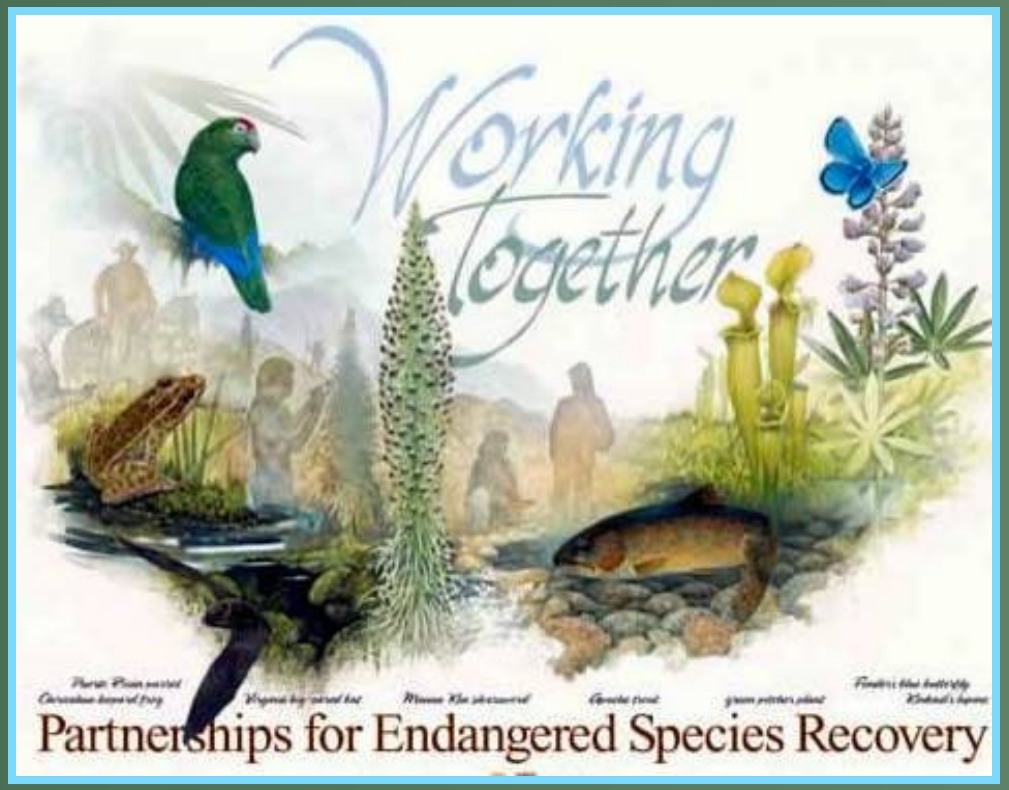
Endangered Species Act

- Became Law in 1973
- Administered by the US Fish and Wildlife Service and the National Marine Fisheries Service
- Section 7 Applies to Federal Agencies



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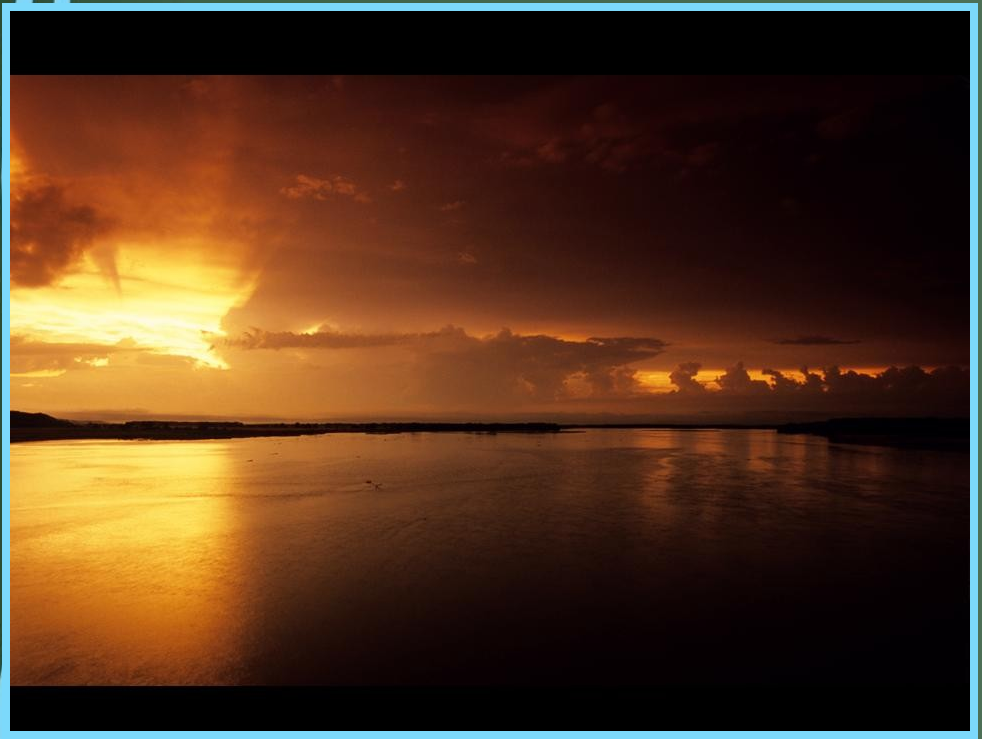
Biological Opinion



- Issued in 2000 and Amendment in 2003
- Found that the Corps' Operation of the System Jeopardized th Continued Existence o the Pallid Sturgeon
- Identified Reasonable and Prudent Alternatives and Measures

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Missouri River Recovery Elements

- Habitat Construction / Channel Modification
- Propagation / Hatchery Support
- Research, Monitoring, and Evaluation
- Flow Modifications
- A[illegible]e

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Bank Stabilization & Navigation Project Fish & Wildlife Mitigation

- Nebraska, Iowa, Kansas and Missouri
- Restores habitat for fish & wildlife lost due to Bank Stabilization and Navigation Project, not species specific
- Overlaps with BiOp Implementation
- Authorized by Water Resources Development Act (WRDA) of 1986 & Amended by WRDA of 1999

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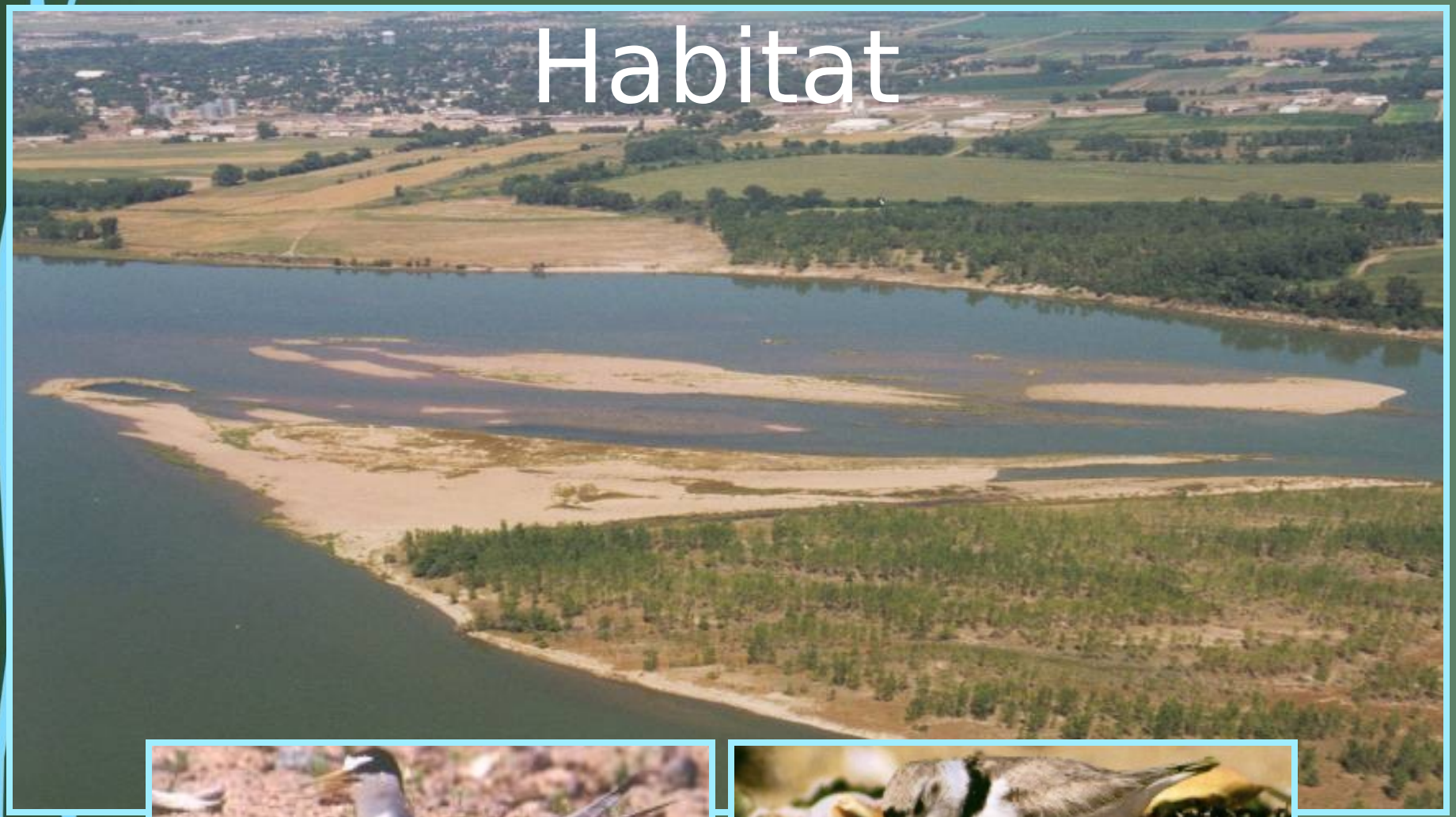
Sandbar Habitat



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Pallid Sturgeon

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Created Habitat

- Shallow Water Habitat
- Emergent Sandbar Habitat

Ponca Habitat Complex

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Channel Modification

California Bend Chute – Chute Construction North of Blair, Nebraska

Overton Bottoms – Bank and Dike Notches near Rocheport, Missouri

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Propagation & Hatchery Suppor

- Over 60,000 pallid sturgeon stocked in river since 1992
- Facility Improvements
  - Water Treatment
  - Expanded Capacities
  - Other Improvements
- Improved Tagging and Tracking Capabilities

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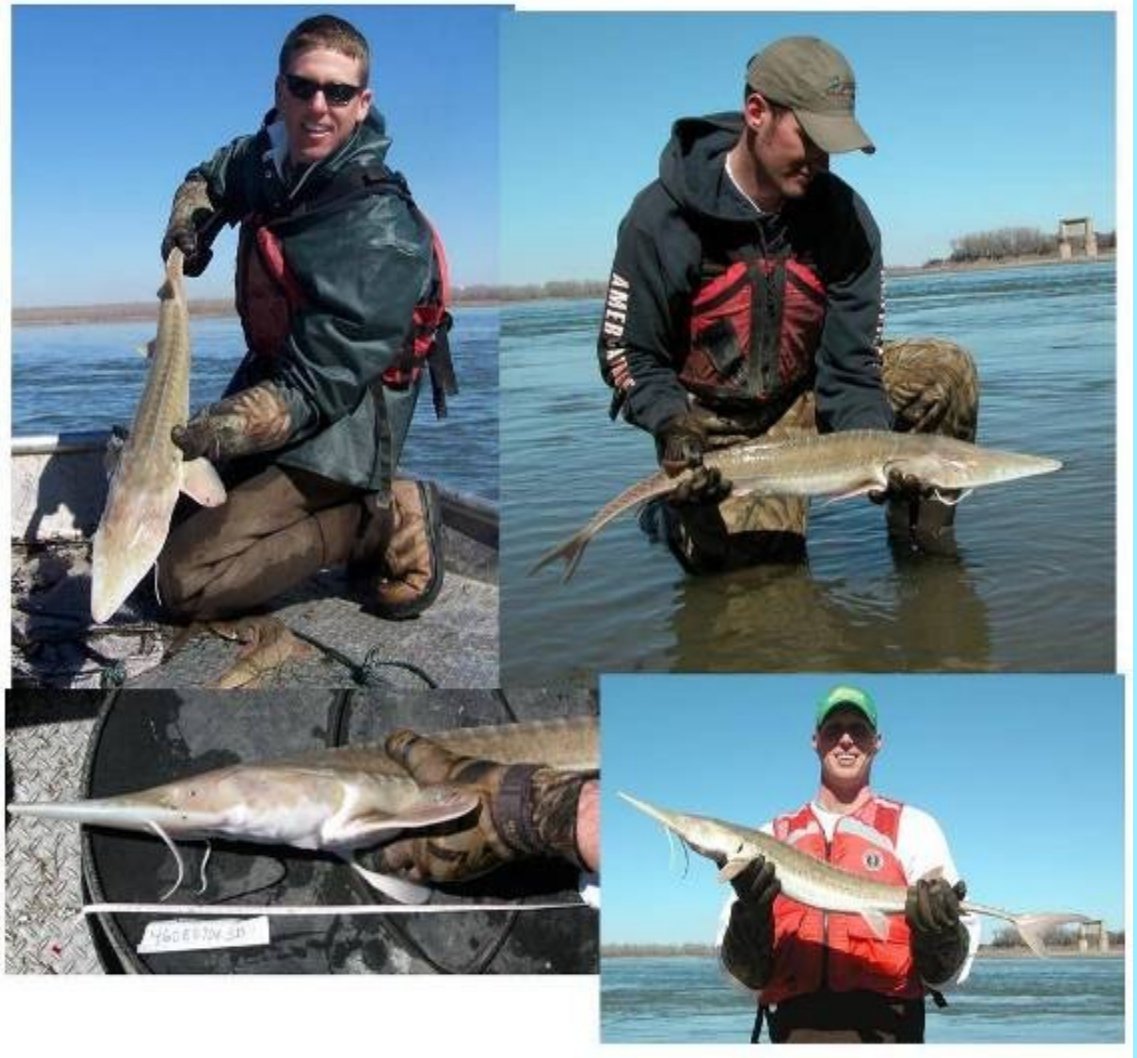
Research, Monitoring, & Evaluation



- US Geological Survey Comprehensive Research
- Population Assessment
- Interior Drainage / Groundwater
- Physical Monitoring

Research, Monitoring, & Evaluation (cont'd)

Modification of Dam Operations for T&E Bi

- Minimize "Take" of Terns and Plovers
- While Serving All Other Project Purposes

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Flow Modification

- Fort Peck Temperature Modification
- Gavins Point Spring Pulse Releases

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Adaptive Management

- Incorporates:
  - New Information
  - Results of Research, Monitoring, and Evaluation
  - Social Considerations
- Int[illegible]ns

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Challenges & Opportunities

- Geographic extent of basin
- Diverse interests
- Long-standing differences
- Drought
- Lack of trust
- Lack of experience with collabora
- No "champion

- Weary of litigation
- Watershed approach
- Power of consensus recommendations
- Stakeholders want a voice in recovery decisions
- Congressional slation

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What is MRRIC?

Missouri River Recovery Implementation Committee

- Provides a basin forum for collaboration on recovery activities
- Ensures consideration of public values in recovery decisions
- Consists of broad range of basin tribes, states, stakeholders, and federal agencies
- Provides consensus-based recommendations to entities in the basin
- Serves as critical part of Adaptive Management

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Thank You!

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